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# North Korea: Growth of the Helicopter Force

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**A Research Paper**

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*EA 85-10111C*

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# North Korea: Growth of the Helicopter Force

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**A Research Paper**

This paper was prepared by [redacted] of the  
Office of East Asian Analysis, [redacted]  
[redacted]  
assisted in its preparation. Comments and queries are  
welcome and may be directed to the Chief,  
Northeast Asia Division, OEA, [redacted]  
[redacted]

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## North Korea: Growth of the Helicopter Force

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### Summary

*Information available  
as of 25 April 1985  
was used in this report.*

North Korea's illegal purchase of 86 US-produced Hughes 500 helicopters in 1984 and 1985 is but one of a series of steps taken since 1974 to build a larger and more flexible helicopter force. Imports from Poland and China as well have helped raise the size of the force to over 250 from a mere 25 aircraft, with North Korean interest in acquiring helicopters paralleling broad international trends. Following the successful use of helicopters by the United States in Vietnam, a large number of developing countries began acquiring them for both attack and troop-carrying roles.

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Once able to perform only transport and support functions, the North Korean helicopter fleet is expanding into a force that should be capable of more complex operations. The large number of newly acquired MI-2 and Hughes helicopters are being integrated into the operational force, but combat training has been limited thus far.

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North Korea because it maintains a large number of highly trained troops in its Special Operations Force. The predominance of light helicopters seriously limits the number of troops that can be carried, but helicopters could be used to infiltrate small teams into the South. In this regard, North Korea's Hughes helicopters pose a special threat because they are indistinguishable from the 195 Hughes 500s in the South Korean inventory.

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Domestic production will play a prominent role in further growth of the force. North Korea recently initiated serial production of a version of the Polish MI-2 utility helicopter, which can be fitted with guns, rockets, and antitank guided missiles. Significant problems are impeding production at this stage, but

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P'yongyang has signed an assistance agreement with Bucharest to produce the French-designed Alouette III helicopter between 1986 and 1990 at the same plant.

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Although North Korea is committed to expanding its helicopter force, we believe that future growth will be constrained by the need to consolidate and train new units and by growing pains in mastering series production. Even so, we anticipate that North Korea will fit more of its helicopters with antitank guided missiles to improve its edge over South Korea in armor-antiarmor capabilities and train more aggressively to use helicopters in a troop insertion role.

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## North Korea: Growth of the Helicopter Force

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### Introduction

The acquisition of sizable numbers of Polish MI-2 helicopters and US Hughes 500s since 1980 has significantly altered the North Korean helicopter force. The 25-helicopter force of 1973 expanded in 1974 with the acquisition of MI-4 helicopters from China. In 1976, North Korea used the MI-4s to form its first tactical helicopter regiment,

North Korea today has three additional regiments:

We believe that North Korea has a sufficient number of helicopters—Hughes 500s not yet in service and MI-2s—to form at least two additional regiments.

### Building the Inventory

North Korea's interest in attack helicopters in the early 1970s reflected broader international trends. Following the United States' extensive use of attack helicopters in Vietnam, a large number of developing countries decided to acquire them.

We believe the growth of the North Korean helicopter force from 25 aircraft in 1973 to over 250 today reflects a progression involving three major turning points (see table 1).

In 1974 the acquisition of 42 Chinese MI-4s and the formation of a tactical regiment marked an earlier decision to move beyond the use of helicopters for

**Table 1**

**The North Korean Helicopter Force <sup>a</sup>**

	MI-8	MI-4	MI-2	Hughes 500	Total
1973	13	12	0	0	25
1974	13	54	0	0	67
1980	13	53	26	0	92
1981	13	53	43	0	109
1983	13	53	61	1	128
1984	13	53	104	45	215
1985	13	53	104	86	256

<sup>a</sup> This table does not include the indigenously produced Hyoksin-2 (MI-2) of which no more than 11 are in service. All figures are approximate as of 25 April 1985.

simple transport and support functions. North Korea had broken ground on a helicopter production facility at Panghyon in 1973, but construction ceased shortly thereafter. We do not know whether the effort at Panghyon was abandoned because North Korea was suddenly able to acquire helicopters from China or because it decided to seek an outside source of supply in anticipation of difficulties in initiating domestic production. Possibly both considerations came into play, for in 1974 the French backed out of a commitment to allow the North Koreans to coproduce the Alouette III helicopter.

In 1976, North Korea moved to acquire light, utility helicopters, specifically the Soviet-designed and Polish-built MI-2. Light helicopters have become popular because they are less expensive and more agile than medium- or heavy-lift helicopters. In Poland, MI-2s have been armed with guns, rockets, and antitank guided missiles. North Korea arms its helicopters with similar weapons.

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By the early 1980s, North Korea began to diversify and improve its light helicopter inventory through additional purchases, as well as reinitiation of a domestic production program:

- Construction of the production facility at Panghyon resumed in 1981. Production of MI-2s began in 1984.

- [REDACTED]

- P'yongyang had by 1984 apparently resumed its quest to coproduce the Alouette III. [REDACTED]

[REDACTED]

The first MI-2 was imaged at Panghyon Airfield in 1977. Two more were photographed in 1979, but North Korea did not begin to receive sizable numbers until 1980, at which point final assembly in Korea began. Between March and October 1980, 23 helicopters were shipped in crates from Poland and assembled at Panghyon. North Korea began to use Sondok Airfield as a second assembly site in early 1982, and by 1984 had moved all final MI-2 assembly there. [REDACTED]

[REDACTED]

P'yongyang's campaign to acquire Hughes model 300 and model 500 helicopters moved forward in 1983 when representatives of the West German firm Delta Avia Fluggeraete, presumably responding to inquiries from P'yongyang, visited and concluded a contract. The first two helicopters, one of each model, were shipped from Los Angeles and diverted to North Korea through Yokohama, Japan, and arrived in late April (see figure 3, Hughes 500 at Sunan). [REDACTED]

US investigations into the illegal diversion of Hughes helicopters to North Korea show that between March 1983 and November 1984 intermediaries involved in

the transaction shipped 86 Hughes model 500 helicopters from the United States. [REDACTED]

[REDACTED] further shipments were halted by US Government action in early 1985. [REDACTED]

[REDACTED]

North Korea is already receiving spare parts for its illegally acquired Hughes helicopters. [REDACTED]

[REDACTED] In late March 1985, Delta Avia Fluggeraete shipped spare parts that it had initially stopped en route as a result of publicity surrounding its illegal diversion of Hughes helicopters to North Korea. [REDACTED]

[REDACTED]

#### Expanding Missions

Paralleling the growth and diversification of the North Korean helicopter force has been a progressive use of these aircraft for more complex missions. [REDACTED]

Before the mid-1970s, when it acquired MI-4s from China, North Korea employed helicopters primarily for transport and support functions. When undertaken in a nonhostile environment, this is a relatively simple task. [REDACTED]

The insertion of troops behind enemy lines is more complex, requiring specialized training and the use of weapons. This mission is particularly important to the North Koreans, whose doctrine calls for sowing confusion in the enemy's rear and disrupting supply of

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**Table 2**  
**Helicopter Characteristics**

	Range (nm) <sup>a</sup>	Operating Radius (nm)	Troop Capacity	Maximum Speed (knots)	Weapons
MI-2	320	160	7	113	Guns, rockets, ATGMs
MI-4	240	120	12-16	110	Guns, rockets, ATGMs
MI-8	200	110	24	140	Guns, rockets, ATGMs
Hughes 500	260	130	4-6	145	Guns, rockets, ATGMs
Alouette III	270	150	6	110	Guns, rockets, ATGMs

<sup>a</sup> With maximum fuel.

frontline units. North Korea maintains a force of up to 70,000 specially trained troops in its Special Operations Force (SOF) to accomplish this task:<sup>1</sup>

- With its 50-plus MI-4s, the 22nd Helicopter Regiment, which trains in troop insertion, could transport up to 800 troops in a one-time lift, either in attacks against airfields or in occupying positions immediately behind South Korean defenses. The much smaller Hughes 500 and MI-2 helicopters combined have a capacity to provide a single lift for an additional 1,200 troops, if all were used in this role.
- With its speed, maneuverability, and small size, the Hughes 500 is especially well suited for use in insertion/infiltration. Because they are visually indistinguishable from South Korea's own 195 Hughes 500s, they are ideal for inserting teams of SOF troops, or small numbers of agents and terrorists into the South.

The North Koreans are apparently interested in night vision equipment and possibly infrared equipment, which could provide greatly improved nighttime of-fensive capability

Placed on Hughes helicopters, such equipment would enhance North Korea's ability to surreptitiously penetrate South Korean airspace and attack targets at night. the North Koreans have not yet succeeded in obtaining such equipment, but we believe attempts to obtain equipment that will improve the combat capability of their helicopters will continue.

During observations marking Army Day in 1982, a small number of MI-2s demonstrated the insertion and extraction of troops, but we have not observed any training in that role since.

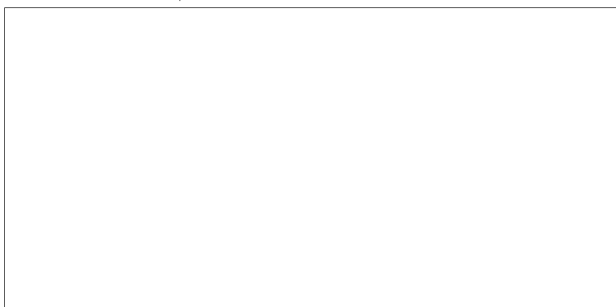
The only helicopters in North Korea that have participated in coordinated air-assault exercises with ground and naval forces are MI-4s. The 22nd (MI-4) Regiment appears to be the best trained and best manned. Although training associated with the Hughes 500s has been limited largely to pilot familiarization thus far,

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North Korea is experienced in arming helicopters. At least since 1976, it has been fitting helicopters with small wings, probably for mounting guns, rockets, and ATGMs. North Korea produces the Soviet-designed AT-3 ATGM and may have recently begun serial production of the US-designed TOW antitank missile.

North Korea obtained the TOW from Iran in 1981 and has probably been attempting to reverse engineer the missile. We believe North Korea has mounted AT-3s on helicopters, but successfully firing the TOW from a helicopter would require a stabilized sight mechanism, which we do not believe North Korea capable of producing at this time. There is no evidence of North Korean employment of helicopters to launch air-to-air missiles, a capability thus far maintained only by the Soviet Union and the United States.

We anticipate that the North Koreans will continue to fit more helicopters with ground attack weapons, probably including ATGMs, and to expand training in an antiarmor role. Over time, all types of helicopters in North Korea could be equipped with antiarmor weapons. The lighter Hughes 500 and the MI-2 can mount weapons only at the expense of transporting troops, but the Hughes is particularly well suited to use as a light antitank platform and serves in this role in Israel and Kenya in addition to South Korea. Fitting large numbers of helicopters with ATGMs would increase the North's edge over the South in overall armor-antiarmor capability.

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As pilots become more skilled, North Korea may start training its Hughes 500 and MI-2 units in coordinated exercises involving ground forces. Troop insertion training would marginally improve the North's advantage in mobility.

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Hughes 500 and MI-2 helicopters may also begin deploying to forward bases, increasing the potential to airlift SOF troops to airbases and other targets deep inside South Korea.

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#### Prospects

Although North Korea is committed to continued expansion of the helicopter force, as shown by its investment in a production facility, we believe the rate of growth will be moderated by the need to consolidate and train its newest units. Moreover, we expect North Korea will continue to experience growing pains in mastering series production of helicopters,

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## Appendix

### The Production of Helicopters

#### Facilities

North Korea's aircraft production facilities at Panghyon in North P'yongan Province include helicopter and fixed-wing plants that are located in adjacent valleys and are, we believe, collectively known as the 6 January Factory. The two valleys housing the 6 January Factory are just north of Panghyon Airfield, where an aircraft repair facility known as the 4 April Factory is located. The 6 January Factory is under the control of the Second Economic Committee, a civilian government organ established in the late 1970s to administer most of North Korea's weapon production programs [redacted]

[redacted] North Korea started construction of what was to become the helicopter production facility in 1973, a year before it negotiated with France to produce the Alouette III. When this deal—as well as later approaches to France and Italy—fell through, construction halted. [redacted]

Construction resumed in 1981 and has proceeded rapidly in tandem with work on the nearby fixed-wing facility. Apparently completed in late 1984, the helicopter facility includes a flight control building, a short takeoff and landing runway, a rotor test cage, and a helicopter landing pad located at what appears to be a weapons calibration range [redacted]

#### Production of MI-2s

Production activities at the plant were noted in November 1984 [redacted]

[redacted]

[redacted] P'yongyang may have initiated helicopter production based primarily on imported parts and materials. Work on helicopter number five may represent

an effort to copy or reverse engineer those parts or materials obtained outside North Korea [redacted]

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**Table 3**  
**North Korean Factories Engaged in Hyoksin-2 (MI-2) Production**

Factory Name	Location	Part Produced/Function Performed
6 January Factory <sup>a</sup>	Panghyon, N. P'yongan Province	Fuselages
4 April Factory <sup>b</sup>	Panghyon Airfield	Generator design
18 January Factory	Kaech'on, S. P'yongan Province	Generators
Hamhung Electrical Equipment Factory (1 June Factory)	Hamhung, S. Hamgyong Province	Gears, shafts
Huich'on Electronics Factory (Factory No. 38)	Huich'on, Chagang Province	Electrical components
Kumgang Electric Factory (Factory No. 33)	Wonsan, Kangwon Province	Rectifiers
Manp'o Tire Factory	Manp'o, Chagang Province	Fuel tanks, tires
Pukchung Machine Works (8 August Factory)	Yongch'on, N. P'yongan Province	Rotor blades
Yangchaek Bearing Factory	Pihyon, N. P'yongan Province	Bearings

<sup>a</sup> The 6 January Factory is responsible for overall production.

<sup>b</sup> The 4 April Factory appears to have significant responsibility regarding technical aspects of Hyoksin-2 production, possibly including final approval.

Both helicopters were under production in February 1985.

#### Production of Alouettes

An agreement reached with Bucharest in January 1985 provides for North Korean production of both the IAR-316B, the French-designed Alouette III helicopter, and the Romanian IAR-93 ground attack jet fighter.

We believe that, of the first 12 Hyoksin-2s produced, at least three have entered service.

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The timespan of the agreement, combined with the scheduled training of North Korean technicians in France, possibly in connection with the Romanian agreement, suggests the effort involving the Alouette III helicopters is geared toward production rather than assembly. [redacted]

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Equipment useful to both projects associated with Romania is being imported from Western Europe.

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Along with this effort at acquisition of foreign equipment, P'yongyang is giving a high priority to allocation of domestic resources to the plant. [redacted]

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